

WHAT IS CLAIMED IS:

1. An information transmitting apparatus which transmits a plurality of signals after multiplexing those, comprising:

    multiplexing means for multiplexing the plurality of signals; and

    control means for controlling a multiplexing ratio among the plurality of signals in the multiplexing means.

2. The information transmitting apparatus according to claim 1, wherein the transmitting apparatus transmits the plurality of signals as a single transport stream.

3. The information transmitting apparatus according to claim 1, further comprising database means for providing data that relates to transmission rates of the plurality of signals at each time point, wherein the control means controls the multiplexing ratio while referring to the database means.

4. The information transmitting apparatus according to claim 1, further comprising encoding means for one of the plurality of signals, wherein the control means controls an output rate of the encoding means.

5. The information transmitting apparatus according to claim 1, wherein the plurality of signals are program information, a video signal, and an audio signal.

6. An information transmitting apparatus which transmits program information after multiplexing it with a

050130-1271260





execute a process comprising:

a multiplexing step of multiplexing the plurality of signals; and

a control step of controlling a multiplexing ratio among the plurality of signals in the multiplexing step.

12. The provider according to claim 11, wherein the control step controls the multiplexing ratio while referring to data that relates to transmission rates of the plurality of signals at each time point.

13. The provider according to claim 11, wherein the plurality of signals are program information, a video signal, and an audio signal.

14. A provider for providing a computer-readable program for causing an information transmitting apparatus which transmits program information after multiplexing it with a video signal and an audio signal to execute a process comprising:

a video encoding step of encoding the video signal;

an audio encoding step of encoding the audio signal;

a program information data generating step of generating data of the program information;

a multiplexing step of multiplexing the data of the program information that is output by the program information data generating step with video data that is output by the video encoding step and audio data that is output by the audio encoding

2025 RELEASE UNDER E.O. 14176

step; and

a control step of controlling a data output rate of the video encoding step, a data output rate of the audio encoding step, a data output rate of the program information data generating step, and a multiplexing ratio among the video data, the audio data, and the data of the program information in the multiplexing step.

15. An information receiving apparatus which receives program information that is multiplexed with a video signal and an audio signal and displays the program information together with the video signal, comprising:

separating means for separating the program information that is multiplexed with the video signal and the audio signal;

storing means for storing the program information separated by the separating means; and

control means for controlling operations of the separating means and the storing means in accordance with a transmission rate of the program information.

16. The information receiving apparatus according to claim 15, wherein the control means controls the operations of the separating means and the storing means so that the program information is acquired only in a prescribed period when the transmission rate of the program information is high.

17. An information receiving method for receiving

USPTO REF ID: A687520

program information that is multiplexed with a video signal and an audio signal and displaying the program information together with the video signal, comprising:

a separating step of separating the program information that is multiplexed with the video signal and the audio signal;

a storing step of storing the program information separated by the separating means; and

a control step of controlling operations of the separating step and the storing step in accordance with a transmission rate of the program information.

18. The information receiving method according to claim 17, wherein the control step controls the operations of the separating means and the storing means so that the program information is acquired only in a prescribed period when the transmission rate of the program information is high.

19. A provider for providing a computer-readable program for causing an information receiving apparatus which receives program information that is multiplexed with a video signal and an audio signal and displays the program information together with the video signal to execute a process comprising:

a separating step of separating the program information that is multiplexed with the video signal and the audio signal;

a storing step of storing the program information separated by the separating means; and

a control step of controlling operations of the

separating step and the storing step in accordance with a transmission rate of the program information.

20. The provider according to claim 19, wherein the control step controls the operations of the separating means and the storing means so that the program information is acquired only in a prescribed period when the transmission rate of the program information is high.

21. A broadcasting system having an information transmitting apparatus which transmits program information after multiplexing it with a video signal and an audio signal and an information receiving apparatus which receives the program information that is multiplexed with the video signal and the audio signal and displays the program information together with the video signal, the information transmitting apparatus comprising:

video encoding means for encoding the video signal;

audio encoding means for encoding the audio signal;

program information data generating means for generating data of the program information;

multiplexing means for multiplexing the data of the program information that is output from the program information data generating means with video data that is output from the video encoding means and audio data that is output from the audio encoding means; and

control means for controlling a data output rate of the

USPTO "PATENT"

video encoding means, a data output rate of the audio encoding means, a data output rate of the program information data generating means, and a multiplexing ratio among the video data, the audio data, and the data of the program information in the multiplexing means, and the information receiving apparatus comprising:

separating means for separating the program information that is multiplexed with the video signal and the audio signal;

storing means for storing the program information separated by the separating means; and

control means for controlling operations of the separating means and the storing means in accordance with a transmission rate of the program information.

22. An information transmitting apparatus which transmits program information after multiplexing it with a video signal and an audio signal, comprising:

program information data generating means for generating program information data including information of a transmission status of the program information; and

multiplexing means for multiplexing the program information data generated by the program information data generating means with an encoded version of the video signal and an encoded version of the audio signal.

23. An information transmitting method for



653130: 727760

transmitting program information after multiplexing it with a video signal and an audio signal, comprising:

a program information data generating step of generating program information data including information of a transmission status of the program information; and

a multiplexing step of multiplexing the program information data generated by the program information data generating means with an encoded version of the video signal and an encoded version of the audio signal.

24. A provider for providing a computer-readable program for causing an information transmitting apparatus which transmits program information after multiplexing it with a video signal and an audio signal to execute a process comprising:

a program information data generating step of generating program information data including information of a transmission status of the program information; and

a multiplexing step of multiplexing the program information data generated in the program information data generating means with an encoded version of the video signal and an encoded version of the audio signal.

25. An information receiving apparatus which receives program information that is multiplexed with a video signal and an audio signal and displays the program information together with the video signal, comprising:

separating means for separating program information data that is multiplexed with the video signal and the audio signal; and

extracting means for extracting information of a transmission status of the program information that is included in the program information data separated by the separating means.

26. An information receiving method for receiving program information that is multiplexed with a video signal and an audio signal and displaying the program information together with the video signal, comprising:

a separating step of separating program information data that is multiplexed with the video signal and the audio signal; and

an extracting step of extracting information of a transmission status of the program information that is included in the program information data separated by the separating means.

27. A provider for providing a computer-readable program for causing an information receiving apparatus which receives program information that is multiplexed with a video signal and an audio signal and displays the program information together with the video signal to execute a process comprising:

a separating step of separating program information data that is multiplexed with the video signal and the audio

Patent Application No. 2004-000000

signal; and

an extracting step of extracting information of a transmission status of the program information that is included in the program information data separated by the separating means.

28. A broadcasting system having an information transmitting apparatus which transmits program information after multiplexing it with a video signal and an audio signal and an information receiving apparatus which receives the program information that is multiplexed with the video signal and the audio signal and displays the program information together with the video signal, the information transmitting apparatus comprising:

program information data generating means for generating program information data including information of a transmission status of the program information; and

multiplexing means for multiplexing the program information data generated by the program information data generating means with an encoded version of the video signal and an encoded version of the audio signal, and the information receiving apparatus comprising:

separating means for separating the program information data that is multiplexed with the video signal and the audio signal; and

extracting means for extracting information of a

